

Appl. No. 10/749,028
Amdt. dated February 7, 2006
Reply to Office Action of November 7, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Canceled)

Claim 2 (Previously Presented): An apparatus for exercising semiconductor devices, said apparatus comprising:

- a plurality of semiconductor devices, each comprising a plurality of elongate, spring connection elements;

- a support substrate comprising a plurality of terminals;

- test connection means for connecting said terminals to a test device;

- a plurality of socket substrates disposed on said support substrate, each said socket comprising a plurality of sockets and a plurality of traces, each said trace electrically connected to one of said sockets;

- means for electrically connecting ones of said traces with ones of said terminals; and

- means for pressing ones of said spring connection elements against ones of said sockets, wherein said spring connection elements generate spring counterforces and thereby form pressure connections with said sockets,

- wherein said plurality of semiconductor devices are dies of an unsingulated semiconductor wafer.

Claim 3 (Canceled)

Claim 4 (Previously presented): The apparatus of claim 2, wherein each socket substrate corresponds to one of said dies.

Claim 5 (Previously presented): The apparatus of claim 2, wherein said support substrate is part of a probe card assembly.

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Claim 6 (Previously presented): The apparatus of claim 5, wherein said support substrate is electrically connected through an interposer to a probe card, and wherein said support substrate, said interposer, and said probe card compose said probe card assembly.

Claim 7 (Canceled)

Claim 8 (Previously presented): The apparatus of claim 2, wherein said test device provides test signals to test a functionality of said semiconductor devices.

Claim 9 (Previously presented): The apparatus of claim 2, wherein said test device provides power to said semiconductor devices, and further comprising a temperature control device disposed to control a temperature of said semiconductor devices.

Claim 10 (Previously presented): The apparatus of claim 9, wherein said temperature control device comprises:

- a first thermal chuck in thermal contact with said semiconductor devices; and
- a second thermal chuck in thermal contact with said socket substrates.

Claim 11 (Previously presented): The apparatus of claim 2, wherein said socket substrates are disposed in rows on said support substrate, and further comprising a plurality of power lines disposed on said support substrate, each said power line corresponding to one of said rows of socket substrates and supplying power to every socket substrate in said row.

Claim 12 (Previously presented): The apparatus of claim 11, further comprising a plurality of isolation resistors, each said isolation resistor disposed between one of said power lines and one of said socket substrates.

Claim 13 (Previously presented): The apparatus of claim 2, wherein said means for pressing comprises one of a test head or a vacuum chuck.

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Claim 14 (Previously presented): The apparatus of claim 2, wherein said means for electrically connecting ones of said traces with ones of said terminals comprise a plurality of bond wires, each said bond wire bonded to one of said traces and to one of said terminals.

Claim 15 (Previously presented): The apparatus of claim 2, wherein said sockets comprise pits etched into a surface of a corresponding socket substrate.

Claim 16 (Previously presented): The apparatus of claim 2, wherein said socket substrate comprises silicon.

Claim 17 - 36 (Canceled)

Claims 37 (Previously presented): The apparatus of claim 2, wherein the plurality of elongate, spring connection elements have a pitch of less than about 5 mils.

Claim 38 -49 (Canceled)